CLAIMS

We claim:

1. A method for performing an input/output (I/O) operation in a computer between an I/O-initiating subsystem and a device through a memory, in which:

the memory is arranged into portions that are separately addressable using first identifiers that are represented using a first number of bits;

for the I/O operation, the device accesses a first space of the memory;

the subsystem addresses I/O requests to a second space of the memory using second identifiers that are represented using a second number of bits;

the method comprising the following steps:

initially mapping the second identifiers to respective first identifiers that identify portions of the memory in the second memory space; and

for any I/O request that meets a remapping criterion, remapping the corresponding second identifier to one of the first identifiers that identifies a portion of the memory in the first space of the memory;

in which the second space is different from the first space and the second number of bits is greater than the first number of bits.

2. A method as in claim 1, further comprising generating each first identifier to have a subset of bits identical to corresponding bits of the second identifier during remapping.

3. A method as in claim 1, further comprising, for any I/O request that fails to meet the remapping criterion, creating a new copy of the data set in the buffer upon each instance of the I/O request.

4. A method as in claim 1, further comprising, for each second identifier that is currently mapped into the first space of the memory and that meets a remapping condition, again mapping the second identifier into the second space of the memory.

5. A method as in claim 4, further comprising the step of freeing for reallocation the portion of the memory in the first space to which the second identifier had previously been remapped.